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**Indiana Michigan Power**  
Cook Nuclear Plant  
One Cook Place  
Bridgman, MI 49106  
IndianaMichiganPower.com

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AEP-NRC-2014-17  
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U. S. Nuclear Regulatory Commission  
ATTN: Document Control Desk  
Washington, DC 20555-0001

Donald C. Cook Nuclear Plant Units 1 and 2  
Second Six Month Status Report in Response to March 12, 2012, Commission Order Modifying  
Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External  
Events (Order Number EA-12-049)

References:

1. Letter from E. J. Leeds and M. R. Johnson, U. S. Nuclear Regulatory Commission (NRC), to All Power Reactor Licensees and Holders of Construction Permits in Active or Deferred Status, "Issuance of Order to Modify Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events," dated March 12, 2012, ADAMS Accession No. ML12054A736.
2. NRC Interim Staff Guidance JLD-ISG-2012-01, Compliance with Order EA-12-049, Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events, Revision 0, dated August 29, 2012, ADAMS Accession No. ML12229A174.
3. Nuclear Energy Institute 12-06, Diverse and Flexible Coping Strategies Implementation Guide, Revision 0, dated August 2012, ADAMS Accession No. ML12242A378.
4. Letter from J. P. Gebbie, Indiana Michigan Power Company (I&M), to NRC, "Donald C. Cook Nuclear Plant, Units 1 and 2, Initial Status Report in Response to March 12, 2012, Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (Order Number EA-12-049)," dated October 26, 2012, ADAMS Accession No. ML12312A473.
5. Letter from J. P. Gebbie, I&M, to NRC, "Donald C. Cook Nuclear Plant, Unit 1 and Unit 2, Overall Integrated Plan in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (Order Number EA-12-049)," dated February 27, 2013, ADAMS Accession No. ML13101A381.

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6. Letter from J. P. Gebbie, I&M, to NRC, "Donald C. Cook Nuclear Plant, Unit 1 and Unit 2, First Six Month Status Report in Response to March 12, 2012, Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (Order Number EA-12-049)," dated August 26, 2013, ADAMS Accession No. ML13240A308.
7. Letter from J. S. Bowen, NRC, to L. J. Weber, I&M, "Donald C. Cook Nuclear Plant, Units 1 And 2 - Interim Staff Evaluation Relating To Overall Integrated Plan In Response To Order EA-12-049 (Mitigation Strategies) (TAC NOS. MF0766 AND MF0767)," dated January 24, 2014, ADAMS Accession No. ML13337A325.

On March 12, 2012, the U. S. Nuclear Regulatory Commission issued Order EA-12-049 (Reference 1) to Indiana Michigan Power Company (I&M), the licensee for the Donald C. Cook Nuclear Plant (CNP) Units 1 and 2. Reference 1 was immediately effective and directed I&M to develop, implement, and maintain guidance and strategies to restore or maintain core cooling, containment, and spent fuel pool cooling capabilities in the event of a beyond-design-basis external event. Specific requirements were outlined in Attachment 2 of the enclosure of Reference 1.

Reference 1 required submission of an initial status report 60 days following issuance of the final interim staff guidance (Reference 2) and an Overall Integrated Plan (OIP) pursuant to Section IV, Condition C. Reference 2 endorses industry guidance document Nuclear Energy Institute 12-06, Revision 0 (Reference 3) with clarifications and exceptions identified. Reference 4 provided the CNP initial status report regarding mitigation strategies. Reference 5 provided the CNP OIP.

Reference 1 requires submission of a status report at six-month intervals following submittal of the OIP. Reference 3 provides direction regarding the content of the status reports. Reference 6 provided the first six-month status report. The purpose of this letter is to provide the second six-month status report pursuant to Section IV, Condition C.2, of Reference 1, delineating progress made in implementing the requirements of Reference 1. Enclosure 1 to this letter provides an affirmation. Enclosure 2 to this letter provides the second six-month update for the implementation of Order EA-12-049, "Order Modifying Licenses with Regard to Requirements for Mitigation of Strategies for Beyond-Design-Basis External Events," including an update of milestone accomplishments since the initial status report.

There have been no changes to the compliance method as documented in the Interim Staff Evaluation (ISE) (Reference 7); however, some specific methods of implementation have changed. These changes have resulted in changes to the OIP Open Item list (Enclosure 2). Updated general descriptions of the coping strategies, including station modifications, are posted on the ePortal. Note: One compliance method change from the OIP was previously reported in Reference 6, prior to issuance of the ISE, and will not be repeated here. There is no change to the final implementation schedule, or need for relief at this time.

This letter contains no new or revised regulatory commitments. Should you have any questions, please contact Mr. Michael K. Scarpello, Regulatory Affairs Manager, at (269) 466-2649.

Sincerely,



Joel P. Gebbie  
Site Vice President

JJV/amp

Enclosures:

1. Affirmation
2. Indiana Michigan Power Company's Second Six-Month Status Report for the Implementation of Order EA-12-049, Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events

c: J. T. King, MPSC  
J. A. Kratchman, NRR/JLD/PMB, NRC  
S. M. Krawec, AEP Ft. Wayne, w/o enclosure  
E. J. Leeds, NRR, NRC  
MDEQ – RMD/RPS  
NRC Resident Inspector  
C. D. Pederson, NRC Region III  
T. J. Wengert, NRC Washington, DC

AFFIRMATION

I, Joel P. Gebbie, being duly sworn, state that I am Site Vice President of Indiana Michigan Power Company (I&M), that I am authorized to sign and file this request with the U. S. Nuclear Regulatory Commission on behalf of I&M, and that the statements made and the matters set forth herein pertaining to I&M are true and correct to the best of my knowledge, information, and belief.


Indiana Michigan Power Company



Joel P. Gebbie  
Site Vice President

SWORN TO AND SUBSCRIBED BEFORE ME

THIS 27 DAY OF February, 2014

  
Notary Public

My Commission Expires 04-04-2018

**DANIELLE BURGOYNE**  
Notary Public, State of Michigan  
County of Berrien  
My Commission Expires 04-04-2018  
Acting in the County of Berrien

## Enclosure 2 to AEP-NRC-2014-17

### Indiana Michigan Power Company's Second Six-Month Status Report for the Implementation of Order EA-12-049, Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events

#### 1. Introduction

Indiana Michigan Power Company (I&M), the licensee for Donald C. Cook Nuclear Plant (CNP), developed an Overall Integrated Plan (OIP) (Reference 1), documenting the diverse and flexible strategies (FLEX), in response to Reference 2. This attachment provides an update of milestone accomplishments since submittal of the OIP. Although there have been no changes to the compliance method as documented in the Interim Staff Evaluation (ISE) (Reference 3), some specific methods of implementation have changed. Updated general descriptions of the coping strategies, including station modifications, are posted on the ePortal. These changes have resulted in changes to "Table 2 - OIP Open Items" below. Changes to existing actions are annotated with "strikeout"; open items numbers 29 and 30 are new. Note: One compliance method change from the overall implementation plan was previously reported in Reference 6, prior to issuance of the ISE, and will not be repeated here. There is no change to the final implementation schedule, or need for relief/relaxation at this time.

#### 2. Milestone Accomplishments

Table 1 – Milestone Schedule contains the milestone(s) completed since the development of the OIP (Reference 1), and are current as of January 31, 2014.

#### 3. Milestone Schedule Status

The following provides an update to Attachment 2 of the OIP. It provides the activity status of each item, and whether the expected completion date has changed. The dates are planning dates subject to change as design and implementation details are developed.

<b>Table 1 – Milestone Schedule</b>			
<b>Milestone</b>	<b>Target Completion Date</b>	<b>Activity Status</b>	<b>Revised Target Completion Date</b>
Submit 60-Day Status Report	October 2012	Complete	
Submit OIP	February 2013	Complete	
<b>Submit Six-Month Updates:</b>			
Update 1	August 2013	Complete	
Update 2	February 2014	Complete with this submittal	
Update 3	August 2014	Not Started	
Update 4	February 2015	Not Started	

<b>Table 1 – Milestone Schedule</b>			
<b>Milestone</b>	<b>Target Completion Date</b>	<b>Activity Status</b>	<b>Revised Target Completion Date</b>
Walk-throughs or Demonstrations	June 2015	Not Started	
Perform Staffing Analysis	June 2014	Not Started	
<b>Modifications:</b>			
Modifications Evaluation	December 2013	Complete	
Unit 1 Design Engineering	June 2014	In Progress	
Unit 1 Implementation Outage	November 2014	Not Started	
Unit 2 Design Engineering	December 2014	In Progress	
Unit 2 Implementation Outage	May 2015	Not Started	
<b>Storage:</b>			
Storage Design Engineering	December 2013	In Progress	March 2014
Storage Implementation	November 2014	In Progress	
<b>FLEX Equipment:</b>			
Procure On-Site Equipment	June 2014	In Progress	July 2014
Develop Strategies with Regional Response Center	May 2014	Not Started	
Install Off-Site Delivery Station (if Necessary)	November 2014	Not Started	
<b>Procedures:</b>			
Pressurized Water Reactor Owners Group issues nuclear steam system supply-specific guidelines	November 2014	In Progress	
Create Site-Specific FLEX Support Guidelines (FSGs) – Unit 1	September 2014	In Progress	
Create Site-Specific FSGs – Unit 2	September 2014	In Progress	February 2015
Create Maintenance Procedures	August 2014	Not Started	
<b>Training:</b>			
Develop Training Plan	March 2014	In Progress	
Training Complete	September 2014	Not Started	
Unit 1 FLEX Implementation	November 2014	In Progress	
Unit 2 FLEX Implementation	April 2015	Not Started	

<b>Milestone</b>	<b>Target Completion Date</b>	<b>Activity Status</b>	<b>Revised Target Completion Date</b>
Full Site FLEX Implementation	April 2015	Not Started	
Submit Completion Report	August 2015	Not Started	

#### **4. Changes to Compliance Method**

Although there have been no changes to the compliance method as documented in the ISE (Reference 3), some specific methods of implementation have changed. Updated general descriptions of the coping strategies, including station modifications, are posted on the ePortal. These changes have resulted in changes to “Table 2 - OIP Open Items” below. Changes to existing actions are annotated with “strikeout”; open items numbers 29 and 30 are new.

#### **5. Need for Relief/Relaxation and Basis for the Relief/Relaxation**

I&M expects to comply with the order implementation date and no relief/relaxation is required at this time.

#### **6. Open Items from OIP and Draft Safety Evaluation**

The following tables provide a summary of the open items documented in the OIP or the Draft Safety Evaluation (SE) and the status of each item.

<b>Pending Action</b>	<b>OIP Open Item</b>	<b>Status</b>
1	Completion of FLEX equipment storage facilities.	In Progress
2	Perform final validation of timing requirement to route alternate suction source to Turbine Driven Auxiliary Feed Water (TDAFW) pump.	Not Started
3	Implement administrative controls program for FLEX related equipment.	Not Started
4	A systematic approach to training will be used to evaluate training requirements for station personnel based upon changes to plant equipment, implementation of FLEX portable equipment, and new or revised procedures that result from implementation of the FLEX strategies.	In Progress

<b>Table 2 - OIP Open Items</b>		
<b>Pending Action</b>	<b>OIP Open Item</b>	<b>Status</b>
5	Complete detailed load shedding and battery duration analysis of Train A and Train B 250 Volt (V) direct current batteries to validate final FLEX implementation strategy, including required procedure changes.	Not Started
6	Modification to TDAFW pump suction piping from Essential Service Water (ESW) system to provide connection point from the discharge of the fire water pumps.	In Progress
7	Complete detailed load shedding and battery duration analysis of N-Train battery to validate final FLEX implementation strategy, including required procedure changes.	Not Started
8	Develop FSGs and associated procedure revisions to implement FLEX mitigation strategies.	In Progress
9	Modify the fire protection header inside the Turbine Building to provide an adequately sized connection to enable transfer of water to Auxiliary Feedwater (AFW) pump suction.	In Progress
10	<del>Permanent nitrogen bottle racks will be installed near each SG PORV operating station with hose and regulators to align for control to remain available in the control room.</del> Permanent nitrogen bottle racks will be installed near each steam generator power operated relief valve operating station with hose and regulators to align for local manual control.	In Progress
11	<del>Modification to connect portable diesel generator to 600 Vac bus 11B [11D] and 21B [21D].</del> Modification to connect portable diesel generator (DG) to 600 Vac bus 11D and 21D.	In Progress
12	<del>Modification to connect portable diesel generator to CRP-3</del> Modification to connect one 6 kW portable DG to each control room instrumentation distribution 120 V Instrument Distribution Panel.	In Progress
13	Modification to connect portable DG to motor control center (MCC) ABD-B to provide alternate power supply to N-Train battery charger.	In Progress



<b>Table 2 - OIP Open Items</b>		
<b>Pending Action</b>	<b>OIP Open Item</b>	<b>Status</b>
14	<p>Modification for hose connection of all main Feed Water line flow nozzle inspection port flanges located near B.5.b connection.</p> <p>Modification to place a new hose connection in the motor driven AFW discharge line in the east main steam stop enclosure.</p>	In Progress
15	<p>4160 Vac bus T11A/D (T21A/D) will be modified to allow connection of external 4160 Vac three-phase portable diesel generator.</p> <p>4160 V alternating current (AC) bus 1A (2A) will be modified to allow connection of external 4160 VAC three-phase portable DG.</p>	In Progress
16	Replace Reactor Coolant Pump (RCP) seals with Westinghouse SHIELD low leakage seals. On Hold pending reevaluation of Generation 3 SHIELD design.	In Progress On Hold
17	<p>Modification adding connection point for portable electric pump to the safety-related 600 Vac buses (e.g., 11B and 11D (21B and 21D)) for the portable boron addition pump.</p> <p>Modification adding a portable boron addition pump powered by a dedicated portable DG.</p>	In Progress
18	<p>Modify monitor tanks installing temporary hose connections.</p> <p>Modification and strategy not required.</p>	In Progress N/A
19	<p>A transfer switch will be installed in the feeder cable between 600 Vac bus 11D and MCC AB-C to provide power to CVCS holdup tank recirculation pump to facilitate water transfers.</p> <p>Modification to provide power to middle boric acid evaporator feed pump.</p>	In Progress
20	Perform containment analysis to validate that containment integrity can be maintained until containment cooling can be restored during Phase 3.	In Progress

<b>Table 2 - OIP Open Items</b>		
<b>Pending Action</b>	<b>OIP Open Item</b>	<b>Status</b>
21	<p><del>Modify Chemical and Volume Control System (CVCS) cross-tie to allow connection of portable boron addition pump.</del></p> <p>Modify Chemical and Volume Control System reciprocating positive displacement pump discharge flange connection to allow connection of portable boron addition pump.</p>	In Progress
22	<p><del>Modify the fire test header inside the Fire Pump House to allow for the hose connection.</del></p> <p>Strategy changed to use existing hose connections on fire test header at the Fire Pump House.</p>	In Progress
23	<p><del>Modify the boric acid transfer pump suction header to add a branch connection with quick disconnect fittings.</del></p> <p>Modify boric acid transfer pump (BATP) suction header to add connection points.</p>	In Progress
24	<p><del>Modify the boric acid transfer pump discharge header to add a branch connection with quick disconnect fittings.</del></p> <p>Modify BATP discharge header to add connection points.</p>	In Progress
25	<p><del>Install standpipe from the 609 ft. elevation in the Auxiliary Building crane bay just inside the personnel door near the roll-up door through a stairwell to the overhead of the 587 ft. elevation to a location near the charging pump room entries.</del></p> <p>Modification not required. Strategy revised to use hose connections.</p>	In Progress N/A
26	Fuel consumption will be finalized when equipment has been procured and tested.	Not Started In Progress
27	Perform calculation to verify time required to establish flow to the Reactor Coolant System (RCS) in MODE 6 with the Reactor Cavity filled.	Not Started In Progress
28	<p><del>Modify vent connection downstream of the boron injection tanks for portable pump connection.</del></p> <p>Modification not required. Strategy changed to use existing Safety Injection Pumps discharge header vents and drains.</p>	In Progress N/A

<b>Table 2 - OIP Open Items</b>		
<b>Pending Action</b>	<b>OIP Open Item</b>	<b>Status</b>
29	Fabricate a tool to provide large volume Phase 3 raw water tie-in to ESW supporting component cooling water cooling for residual heat remover (RHR).  Note: New scope to address Phase 3 restoration of RHR.	In Progress
30	Modify 600 VAC MCC circuit breakers to provide Phase 2 electrical power connections to close safety injection (SI) accumulator discharge valves.  Note: New scope addresses Phase 2 need to close SI accumulator discharge valves to prevent nitrogen injection from the SI accumulators.	In Progress

<b>Table 3 – ISE Open Items</b>	
<b>Draft SE Open Item [ISE (Reference 3)]</b>	<b>Status</b>
3.2.1.8.A - Core Sub-Criticality – Confirm resolution of the generic concern associated with the modeling of the timing and uniformity of the mixing of a liquid boric acid solution injected into the RCS under natural circulation conditions potentially involving two-phase flow.	Open
3.2.3.A - Containment Functions Strategies -Verify containment pressure and temperature response based on using conventional RCP seals.	Open
3.2.4.7.A - Water Sources-Determine if Lake Township water supply can be used to cope after a tornado event since neither the condensate storage tanks nor the fire water storage tanks are protected against tornado borne missiles. This is an alternate approach from the strategies identified in Nuclear Energy Institute 12-06 as it relies on separation distance during a tornado to take credit for a water source. (Significant)	Open
3.2.4.10.B - Battery Duty Cycle - Verify approach used to qualify the station batteries duty cycle to 12 hours.	Open

## 7. Potential Draft Safety Evaluation Impacts

CNP has not yet received a Draft SE; therefore, no potential impacts can be determined.

## 8. References

The following references support the updates to the OIP described in this attachment.

1. Letter from J. P. Gebbie, Indiana Michigan Power Company (I&M), to U. S. Nuclear Regulatory Commission (NRC), "Donald C. Cook Nuclear Plant, Unit 1 and Unit 2, Overall Integrated Plan in Response to March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events (Order Number EA-12-049)," dated February 27, 2013, ADAMS Accession No. ML13101A381.
2. Letter from E. J. Leeds and M. R. Johnson, (NRC), to All Power Reactor Licensees and Holders of Construction Permits in Active or Deferred Status, "Issuance of Order to Modify Licenses with Regard to Requirements for Mitigation Strategies for Beyond-Design-Basis External Events," dated March 12, 2012, ADAMS Accession No. ML12054A736.
3. Letter from J. S. Bowen, NRC, to L. J. Weber, I&M, Subject: "Donald C. Cook Nuclear Plant, Units 1 And 2 - Interim Staff Evaluation Relating To Overall Integrated Plan In Response To Order EA-12-049 (Mitigation Strategies) (TAC Nos. MF0766 and MF0767)," dated January 24, 2014.